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### **ABSTRACT**

Despite its longevity as an educational activity, little empirical evidence exists to support the notion that academic debate is of value to participants. Numerous contemporary texts have proposed and advanced the claim that debating enhances the critical thinking skills of participants. Several of these texts find this claim so apparent that it requires no real evidence to support it. However, a close examination of the available research materials yields scanty evidence at best. The endorsement of a causal relationship between debate and improved participant critical thinking ability generally rests on one of three sources: Gruner, Huseman, and Luck (1971); Huseman, Ware, and Gruner (1972); and Colbert and Biggers (1985). In addition to these reports, a large amount of personal testimonial evidence supports this view. Currently, there remains little or no scientifically gathered data to support the widely espoused belief that study of or participation in debate enhances a student's ability to think critically. What is needed is a study which examines the exact nature of the well-established link between debate and critical thinking ability. Finding fault with the support currently offered by researchers does not disprove the claim that debate enhances critical thinking ability but the assumptions, faculty reasoning, hasty conclusions, and the misinterpretation of such studies certainly do constitute bad support. (Thirty-two references are attached.) (HB)



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# Academic Debate and Critical Thinking: a Look at the Evidence

by

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presented to

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# Academic Debate and Critical Thinking

Competitive debate and the study of debating occupied Americans involved in higher education before America became an independent nation (Greenstreet, 1989). However, despite the longevity the activity has enjoyed, little empirical evidence exists to support the notion that debating is of value to participants. While it is true that every now and then a public figure provides an unsolicited testimonial to the value of debating or a survey of former debaters reveals support for the educational value of the activity, this irregular stream of testimonials is neither sufficient to convince the unbelieving nor an acceptable substitute for reliable data that debate moves practitioners toward desired objectives. Such data should be gathered by any group of professionals concerned with assessing the worth of their endeavors. It should certainly be available in a field so thoroughly focused on the uses and abuses of evidence as debate. Unfortunately, while most contemporary debate texts claim study of and/or experience in debate enhances the critical thinking skills of practitioners, little evidence exists in support of that claim. 1 Most of the evidence cited as support for debate in contemporary texts fails to meet the standards for evidence reflected in those very texts. This paper (1) explores the frequently proposed claim of currently available texts in debate and forensics that debating enhances the critical thinking skills of participants, (2) examines the evidence on which such claims are based, and (3) concludes there is little support for the widely espoused belief that study of or participation in debate enhances a student's ability to think critically. This paper does not challenge the claim itself, but it does reject the validity and/or reliability of the evidence cited to support it.

This paper focuses on currently available texts for several reasons. Initially, many of the texts reviewed have been available for some time. Several are revisions and as such should represent a distillation and clarification of the author's best work. Further, debate has changed a great deal in the past two decades. The changes have been substantial and



have resulted in debate 1991 bearing only marginal resemblance to debate 1965. Intercollegiate forensics directors commonly refer to the "theory explosion" of this time period, an explosion which has tremendously expanded both affirmative and negative options in debating policy propositions. Still more basic is the shift to cross-examination in all formats of debate. In addition, over 330 colleges and universities annually debate propositions of judgment through the Cross Examination Debate Association, an option only sporadically available prior to this period. Earlier texts would not be expected to consider nonpolicy proposition debating; for a contemporary text ignoring such debate would represent a serious oversight.<sup>2</sup> Lincoln-Douglas debate over propositions of judgment has become commonly accepted and nationally endorsed on the high school level during this time. While prior to the period in question a researcher could reasonably assume some similarity of experience shared by all debaters, such an assumption today would be true only on the most rudimentary and fundamental level. Finally, debating today is wholly different due to the tremendous proliferation of summer institutes and preseason analysis clinics, and the widespread acceptance of and reliance on handbooks, externally prepared briefs and cases, and prepackaged evidence. This paper will not assess the worth of these changes. They are noted as indicators that a contemporary debater experiences a substantially different world from that which prevailed only two decades ago.

Only one professional journal claims argumentation and debate as its primary focus, Argumentation and Advocacy (formerly The Journal of the American Forensic Association). During the recent past, Argumentation and Advocacy has tended increasingly toward a focus on argumentation theory, with less attention on the classroom and competitive debate. Unfortunately, no other national refereed journal has filled the void thus created. Debate coaches are not notorious as prolific publishers of research, so perhaps there has been no perceived need for such an outlet. As this paper reports material readily available to other researchers, it relies on the most recent Index to Journals in Communication Studies



Through 1985 (Matlon and Facciola, 1987) as the primary index consulted to locate journal articles in related refereed journals.

## The Claim

Many contemporary authors claim debating helps students think better. Several find this claim so apparent as to require no evidence to support it. Patterson and Zarefsky (1983) assert "The development of arguments...encourages critical thinking because it consistently demands the questioning, examining, and restructuring of knowledge according to the laws of validity and warrant." (p. 313). Sanders (1983) feels debating allows participants to more clearly see both sides of an issue, thus opening the mind (p. 2). Sheckels (1984) not only agrees with Sanders, but adds that debate teaches important thinking skills, including investigating and solving problems, analyzing and scrutinizing argumentation, and forceful but rational challenging of others' arguments (pp. 3-4). Bartanen and Frank (1991) claim

Debate is a form of critical thinking, a way of gathering and interpreting information. A debater learns not to trust assertions. A debater knows how to appreciate and overcome objections to a position and appreciate that problems and issues have more than one side (p. 12).

Ziegelmueller, Kay, and Dause (1990) extend Bartanen and Frank's claim as they assert

It is ironic that over the past ten years as various educational reports and
commissions have called for more systematic training in the processes of critical
thinking and logical problem solving, some writers in philosophy and rhetoric have
de-emphasized the inquiry aspects of argumentation and focused almost exclusively
on argument as persuasion. We believe strongly in the dialectical function of
argumentation, and we also believe that instruction in argumentation is an excellent
means of teaching critical thinking (p. vii).

Wilbanks and Church (1991) not only endorse the previous conclusions, they also expand the benefits of debate relative to time.



We view learning argumentation and participating in debates... as extremely valuable....The usefulness of developing abilities such as analysis, problem solving, critical thinking, organizational proficiency, research prowess, and confidence in presentation is enduring. Long after the course is over, the student will continue to benefit from these skills (p. vii).

Fryar and Thomas (1980) assert the skills learned in debate "transfer directly out of the academic world into the everyday experiences of our society" (p. i). Pelham and Watt (1989) assert debate participants' gains in rationality are fundamental to the continued well-being of our society. They claim "In order for this society to effectively meet the political, legal, economic, social, and religious challenges facing it, citizens must be capable of effective public debate" (p. 4). None of the authors cited in this paragraph cites a reference where a curious reader may locate the support upon which such claims are built. These claims may represent personal testimony based on years of coaching and debating experience; they may result from the experience of returning alumni who testify to the value of experience in argumentation and debate training; they may have resulted from unreported research. The claims appear to be statements of personal belief, testimony to the authors' experiences and/or attitudes toward debate. These claims may be true, but they are unsupported in the texts.

While none of the authors cited in the preceding paragraph follow the debater's maxim "he who asserts must prove," several other authors reveal the source(s) for their claim that debate improves the critical thinking ability of the participants. Foremost among the authors who build an extensive case for the benefits a participant may derive from academic debate is Austin Freeley (1986, 1990). Among the seventeen separate values to be derived from participation in debate are three of interest to this paper (Freeley, 1990, pp. 19-27). Freeley (1990) contends debate develops (1) proficiency in critical thinking and (2) the ability to make prompt, analytical responses, while (3) encouraging mature judgement (pp. 21-25)<sup>3</sup>. The cited source for Freeley's claims is a study by Huseman, Ware, and Gruner



(1972) which will be discussed later. Like Freeley, Norton (1982) contends debate develops critical thinking ability (pp. 32-3). Norton argues that by analyzing problems, selecting and examining evidence, interpreting data, determining logical relationships, testing reasoning and reaching conclusions the participant necessarily becomes a more complex and critical thinker (p. 33). As is the case with several other authors, Norton feels the relationship between debate and critical thinking ability is causal and linear. He contends "research over four decades" proves "critical thinking ability is significantly improved by courses in argumentation and debate and by debate experience" (pp. 33-4). Norton actually cites only a study by Gruner, Huseman, and Luck (1971) which is essentially similar to the article on which Freeley depends and which will also be discussed later. Sayer (1980) bases his claim that debate improves critical thinking ability on the Huseman, Ware, and Gruner (1972) article Freeley cites (p. 19), and he extends the claim by also contending debaters' improved critical abilities result in better decisions (pp. 53-4). Pfau, Thomas and Ulrich (1987) contend "You will be a less dogmatic thinker, even while your powers of analysis and critical judgement are sharpened by the training and discipline inherent in debate" (p. 15). They argue debate improves participant critical thinking, evaluation, and decision-making skills, claiming "Curricular offerings in debate and argument, as well as collegiate and high school co-curricular programs in debate, are among the most effective vehicles to enhance these skills" (Pfau, Thomas, and Ulrich, 1987, p. i). These authors cite a report by Colbert and Biggers (1985) as support for their nine independent benefits of debating (Pfau, Thomas, and Ulrich, 1990, pp. 12-15).

The essence of the claims cited in support of academic debate as an educational activity is that a strong and causal relationship exists between study of argumentation and debate, participation in competitive debate, and improved critical thinking ability. Empirical support for this claim demands that the experience of debating and/or the experience of studying argumentation and debate in a formal course be isolated as a causal agent. It further requires debaters demonstrate an increase in critical thinking ability after exposure to



debate experience and/or coursework. As we shall see in the next section of this paper, those conditions have not been met by the studies cited.

# The Evidence

The authors who endorse the causal relationship between debate and improved participant critical thinking ability cite one of three sources in support of that claim: Gruner, Huseman, and Luck (1971); Huseman, Ware, and Gruner (1972); and Colbert and Biggers (1985). Each of these articles attempts to explore the relationship between critical thinking ability and academic debate by measuring the critical thinking abilities of participants in debate or of college students exposed to debate through coursework in argumentation and debate.

Probably the most significant study, at least in terms of the frequency with which it is cited in other works, is the one conducted by Huseman, Ware, and Gruner (1972).4 This study is most frequently cited to support the claim that participation in debate improves students' ability to reason critically (Norton, 1982; Sayer, 1980; Freeley, 1986, 1990). The study compares high school debaters' scores on the Watson-Glaser Critical Thinking Test (now the Watson-Glaser Critical Thinking Appraisal [WGCTA]), and discovers students perceived to be excellent debaters outscore those perceived to be much less effective debaters on this test. The WGCTA offers a reasonable (though apparently not spectacular) level of reliability, as it assesses critical thinking through reading and selection from multiple choice responses (Mitchell, 1985; Woehlke, 1985). The use of the WGCTA for purposes of attempting to link critical thinking with another behavior on the basis of group scores appears entirely consistent with the nature of the instrument (Woehlke, 1985, p. 683). Further, the WGCTA appears to be the best instrument available to assess the complex construct of critical thinking (Woehlke, 1985, p. 685; Berger, 1985, p. 1693).6 This study supports only the notion that excellent debaters score highly on this test of critical thinking ability. It does not support the claim that coursework or participation in debate causes a difference in the student's critical thinking ability, or to demonstrate any



improvement by participants in the study. Huseman, Ware, and Gruner (1972) argue a reasonable interpretation of their study to be that high achievers in critical thinking are more likely to be successful in debate (p. 265). McGlone (1974) explains "There is a rather large number of investigations which demonstrate that debate improves certain cognitive abilities and a large body of criticism of these studies which points out that people who have these abilities are simply attracted to debate" (p. 140). The inability to resolve this chicken/egg question continues to plague research investigating the relationship between debating experience and critical thinking ability. An unmentioned but underlying concern is that improvement in cognitive abilities is the thrust of a student's education. To claim any single activity or course of study achieves that effect by itself is simply inappropriate (if only because that activity or course occurs in a context of similarly targeted activities and courses).

Gruner, Huseman, and Luck (1971) studied high school students participating in a summer debate institute. As in the previously discussed study, debaters completed the WGCTA on the first day of the workshop, and after the workshop those who had coached or judged the debaters rated the subjects according to perceived debate ability. Scores on the WGCTA were compared with perceived debating ability. Higher rated debaters performed better on the WGCTA overall and in all five subcategories (Gruner, Huseman, and Luck, 1971, 64-5)<sup>7</sup>. As with the previous study, it is impossible to demonstrate a causal link between debate and critical thinking or to claim improvement in critical thinking ability. What this study appears to demonstrate is that better critical thinkers are perceived as more effective debaters. McGlone (1974) comments "It may be that critical thinking is a characteristic already possessed by debaters, rather than an affect [sic] of debate training" (p. 143).

The remaining piece of evidence cited by authors of contemporary debate texts, a report by Colbert and Biggers (1985), is actually a survey of the literature rather than a scientific study. The claims for improved critical thinking ability are referenced to



Norton(1982), who the reader will recall bases his conclusions on Huseman, Ware, and Gruner (1972). While citation of this article represents an interesting piece of documentary circumlocution, the claim remains subject to the evidentiary concerns raised in the previous two paragraphs.

# Other Evidence

While hard empirical evidence supporting the claim that debate enhances critical thinking abilities is lacking, there appears to be an abundance of other support. Even a casual reader may reasonably conclude the authors cited above endorse the validity of the claim. As these authors include some highly regarded names in both forensics and the field of speech communication, such endorsement might be considered expert (if biased) testimony. There is also considerable solicited and unsolicited testimonial evidence, often (but not always) from surveys.

Both solicited and unsolicited testimony is quoted with abandon in texts and articles purporting to endorse the value of debating. Several sources cite a survey published by Union and Freedom magazine in 1960 (Freeley,1986; Klopf and Lahman, 1973; Colbert and Biggers, 1985). This survey reports "a very high percentage of persons who have achieved leadership positions have had school or college debate experience, and they regard that experience as a significant factor in their attainment of those positions" (Freeley, 1986, pp. 19-20). Future debate texts and opinion pieces may well replace the now-dated Union and Freedom survey with a survey conducted by Matlon and Keele (1984). The survey is limited to participants in the National Debate Tournament between 1947 and 1980.8 Of the 703 respondents, nearly forty percent had earned law degrees and over twenty percent held doctorates. 633 of 703 had at least one advanced degree, with 209 holding more than one (Matlon and Keele, 1984, p. 195). Clearly, these respondents continued the level of achievement they attained in intercollegiate debate. The respondents also list a number of advantages to participation in debate, including improved critical thinking, organizational abilities, the ability to think quickly, and improved open-mindedness/objectivity (Matlon and



Keele, 1984, p. 197). Respondents to this survey clearly feel they benefited significantly from their intercollegiate policy debating experiences. Hill (1982) provides a refreshing use of survey data, albeit on a limited scale, as he seeks reasons students participate in debate. He surveyed students at three tournaments in the Southeastern U.S. to find out what draws them to debate. Their answers may not be applicable everywhere, but they are enlightening nonetheless. Reasons listed by a large proportion of the respondents include improved analytical skills, opportunity for educational/learning experiences, and improved argumentation skills (Hill, 1982, p. 82). This survey provides an indicator of typical student expectations from debate. It also reflects student perceptions of the outcomes they are experiencing as a result of participation in competitive debate.

Unsought testimonials from former debaters abound. Freeley (1986) quotes John F. Kennedy, who says "I think debating in high school and college a most valuable training whether for politics, the law, business, or for service on community committees such as the PTA and the League of Women Voters" (Freeley, 1986, pp. 19-20). McBath (1975) includes a number of ringing testimonials to the value of debate, including this frequently-cited excerpt from Helen M. Wise, former president of the National Education Association

No college freshman can project twenty-five years to decide what he needs to learn—subject matter is easily forgotten and in today's world, the knowledge explosion makes constant learning an inevitability. But all adults today need to be able to communicate with clarity, to articulate ideas, to reason, to separate key facts from the barrage of ideas we all are exposed to every day. No single activity can prepare one better than debating—the ability to think on one's feet, to form conclusions rapidly, to answer questions logically and with clarity, to summarize ideas are all processes which forensic activities develop and develop well (p. 82).



McBath (1975) also includes testimonials from individuals who attribute their success to debate experience, as in the following from Richard Markus, past president of the American Trial Lawyer's Association:

While the skills of oral presentation were necessarily developed during my forensic training, I consider those skills clearly secondary to the skills or organization and analysis which were finely honed during that training. They involved the ability to evaluate a general topic with minute care over an extended interval, followed by the ability to organize a concise persuasive argument on that subject, followed by the ability to apprehend and organize material presented by an adversary in a short time, followed by the ability respond in a tightly knit and well supported structure in a similar short time interval (p. 100).

A tremendous variety of former high school debaters attest to the value of debate training on their thinking as well as their communication abilities. Even Lee Iacocca (1984) jumped on the bandwagon in his autobiography. Testimonial and survey support appear consistent that debate experience equates with positive changes in participant thinking behavior.

#### Discussion

Former debaters and debate coaches and judges alike appear convinced debate provides students an exceptional oducational opportunity, one which integrates what they have learned while forcing them to learn more broadly and in greater depth than they would otherwise. The competitive challenge of creating, defending, and attacking arguments appears to separate debate from any other educational exercise as a tool for enhancing the student's critical thinking skills. Why is there no scientifically-gathered data to support the claim that debate does indeed enhance critical thinking ability?

One reason is that the variable (debate) is usually experienced during long periods of time (typically the academic year) while the subjects to be studied (debaters) are exposed to a great many phenomena, some of which are also designed to improve their critical thinking abilities. Pre- and post-tests of students enrolled in argumentation and debate courses or



participating in competitive academic debate would lead to no more valid conclusions than the Ware, Gruner, and Huseman (1972) or Huseman, Gruner, and Luck (1971) studies previously discussed, unless debate or the course were the only stimulus to which the student were exposed during the time the study was conducted. For similar reasons, the concept cannot be studied over a period of years. A student would normally be expected to mature in critical thinking (along with a host of other physical, social, moral, and mental variables) as a result of exposure to education and as a normal part of growing up, of coming of age.

Another problem occurs with studies which might compare debaters with nondebaters: contamination. For example, Semlak and Shields (1977) attempted to determine the effects of debate training in nondebate activities. They used the 1976 Bicentennial Youth Debates contests in extemporaneous and persuasive speaking as their data base, comparing judge responses to students with debate experience to the responses to those without. Problems occur as about half of the judges are forensics professionals (who would presumably use their normal tournament standards of evaluation) and experience in one competitive speaking endeavor probably contributes to behavior in another competitive speaking endeavor. Nevertheless, Semlak and Shields (1977) conclude "This study strongly confirms the ability of students with debate experience to achieve comparatively high ratings in analysis...and organization in activities far removed from the format of competitive school debate" (p. 195). And questions concerning the merit of studies in debate and critical thinking have been raised periodically during the past twenty years. Faules, Rieke, and Rhodes (1978) are sufficiently disenchanted with the quality of such support to conclude "While teachers of forensics can certainly point with pride to many former students who have achieved success, almost no worthwhile research has been done to establish the extent of the importance of forensic experience in the success" (p. 55). Even when studies are available, and when such studies measure data accurately, researchers are unable to generalize from that data. Anderson (1974) decries the general lack of hard



support for an activity he prizes highly. In a very thorough review of literature to that date, he finds "very little current research" in the area of personality development and participation in forensics (Anderson, 1974, p. 151). His criticism could be extended to additional areas as well. There is simply very little empirical material out there in national and regional refereed journals or texts of the past two decades.

What is available, and in great quantity, is personal testimony. While testimony itself is not necessarily unconvincing, there are good reasons these surveys should not be used as a substitute for more objective data. Probably the primary reason is neither survey accurately reflects the scope of debater experiences today. Matlon and Keele (1984) comes closer, but only by virtue of recency. But they interviewed only those who had achieved significant success in intercollegiate debate. Finally, these surveys leave unanswered the question of whether debate attracts students who are already highly motivated to achieve. Indeed, these surveys are more likely than others to invite such an indictment.

## Conclusion

What is needed is a study which examines the nature of the well-established link between debate and critical thinking ability. The unresolved chicken/egg question may be researchable through the relatively recent evolution of the summer debate institute. A two-week institute offers an opportunity to pre- and post-test subjects over a short but intense period of time devoted almost exclusively to study of and practice in competitive debate. Such institutes are held throughout the nation at all levels of debating from novice through champion. It would be possible to pre- and post-test subjects at several institutes throughout the country and generate data which would allow comparison of improvement on Watson-Glaser scores by region, size and nature of workshop curriculum, length of workshop, and level of debate experience. Such data may be expected to address the issue of causality in the relationship between debate and critical thinking ability.

Freeley (1986) suggests debate demands students develop proficiency in critical thinking: (1) to create an argument, a student is required to research issues (which requires



knowledge of how to use libraries and data banks), organize data, analyze the data, synthesize different kinds of data, and evaluate information with respect to the quality of conclusions it may point to; (2) to form an argument after this process, a student must understand how to reason, must be able to recognize and critique different methods of reasoning, and must have an understanding of the logic of decision making; (3) the successful communication of arguments to audiences reflects another cognitive skill: the ability to communicate complex ideas clearly with words; (4) finally, the argumentative interaction of students in a debate reflects an even more complex cognitive ability-the ability to process the arguments of others quickly and to reformulate or adapt or defend previous positions. (pp. 27-28). Is debate better than other ways a student may derive such benefits? Freeley does not claim experience in debate is superior to other methods, only that it is different. His argument is not that debate is the only way, only that it offers a unique set of characteristics which set it apart from other methods of stimulating student growth along the lines indicated above. He says "debate is distinctive because of its unique dialectical form, providing the opportunity for intellectual clash in the testing of ideas" (Freeley, 1986, p. 27).

Finding fault with the support offered to endorse the claim that debate enhances critical thinking ability does not disprove the claim such evidence is meant to support. The a priori assumptions underlying claims, the hasty conclusions of scientific studies, and the misinterpretation of such studies are merely bad support. Their problems do not support the conclusions drawn, it is true, but neither do they disconfirm those claims. No serious research doubts debate is an activity from which students may derive tremendous benefit. Unfortunately, the debate community has failed to adequately document claims of such benefit. Productive research in the immediate future should be directed toward discovering the immediate effect of participation in debate on the critical thinking ability of the participants. That a relationship between these variables exists is well supported; future research should address the nature of that relationship.



Anderson (1974) warns lack of such research may soon become intolerable.

In an age of educational accountability, the forensics community is and will increasingly be called upon to tell what it seeks to do, how well it accomplishes its goals, and what other effects it has. Surprisingly, there seems little interest in such research at this time (p. 155).

Measuring progress on definable outcomes, discovering specific behaviors and abilities, is the first step toward accountability. When we deal with what is measurable, we deal with what is possible to verify and to validate. If the outcomes of debate are as incontrovertibly positive as surveys and testimony suggest, there appears to be no reason to expect empirical research not to find a causal relationship between participation in debate and enhanced critical thinking ability.



<sup>&</sup>lt;sup>1</sup> Indeed, most currently available intercollegiate debate textbooks do not bother to cite a source for the claim of improved critical thinking ability. Freeley (1986, 1990), Norton (1982), Sayer (1980), and Pfau, Thomas, & Ulrich (1987) are the exceptions.

<sup>&</sup>lt;sup>2</sup> Several of the authors cited in this paper focus exclusively on nonpolicy debate. Among them are Bartanen & Frank (1991), Church & Wilbanks (1986, 1991), Corcoran (1988), And Pelham & Watt (1986, 1989).

<sup>3</sup> This latter claim results from the debater's tendency to suspend judgement as a result of an increasingly complex appreciation for the topic. This complexity, or "multivalued orientation," derives from the necessity to research and argue both sides of the proposition, according to Freeley. (1990, p. 25).

4 The use of this article to claim debate improves critical thinking ability is questionable. The authors appear more concerned with helping coaches identify potentially effective debaters. They conclude "it would seem to follow, from a pedagogical point of view, that coaches and directors can best improve their charges' debating performance by attempting to develop in them the abilities measured by the tests in this study: logical thinking, reflective thinking, and the ability to organize ideas" (Huseman, Ware, and Gruner, 1972, p. 265).

5 Some critics claim a large judgmental component on the Watson-Glaser "inference" subtest impunes the value of this standardized test (Helmstadter, 1985, p. 1693-4; Berger, 1985, pp. 1692-3).

6 Helmstadter (1985) would like to see more direct comparison with the Cornell Critical Thinking Test and the A.C.E. Test of Critical Thinking (p. 1694).

7 The lone exception occurred in the "Evaluation of Arguments" subcategory, where third quartile (next to lowest) debaters outscored those in the second quartile (Gruner, Huseman, & Luck, 1971, 64-5).

8 Matlon and Keele (1984) offer two justifications for such a restriction: (1) it was possible to locate these participants, and (2) the authors presume these subjects had devoted a considerable "proportion of their academic careers to debate" (p. 194).

9 Of course, that eventuality would itself bias the experimental design, as it would negate the normal student milieu in which debate and the study of argumentation and debate normally occur.



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